

Attorney Docket No. IMMR-038/06US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Louis B. ROSENBERG *et al.*

Serial No.: 10/781,801

Examiner: Hal D. Wachsman

Filed: February 20, 2004

Art Unit: 2857

Confirmation No.: 5176

For: **DIGITIZING SYSTEM AND ROTARY TABLE FOR DETERMINING 3-D
GEOMETRY OF AN OBJECT**

U.S. Patent and Trademark Office
220 20th Street S.
Customer Window, Mail Stop Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- ☐ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☒ In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - ☒ the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - ☐ a statement as specified in 37 C.F.R. §1.97(e).
- ☐ In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- ☒ Check in the amount of \$180.00 is attached.
- ☐ A return receipt postcard is also enclosed.
- ☐ Please charge \$__ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: November 5, 2004

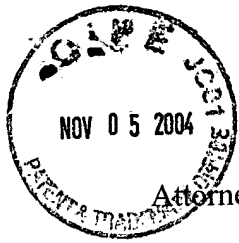
Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, VA 20190-5656
Tel: (703) 456-8000
Fax: (703) 456-8100

Respectfully submitted,
COOLEY GODWARD LLP

By:



Erik B. Milch
Reg. No. 42,887



Attorney Docket No. IMMR-038/06US

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(c)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08 (1 of 2) is provided on the enclosed CD.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. 08/739,454 (now U.S. Patent No. 6,134,506), 08/512,084 (now U.S. Patent No. 5,724,264) and/or 09/687,923 (now U.S. Patent No. 6,697,748) to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication _____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) _____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) _____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing of:

- ☒ a final action under 37 C.F.R. §1.113;
- ☐ a notice of allowance under 37 C.F.R. §1.311; or
- ☐ an action that otherwise closes prosecution in this application.

In accordance with 37 C.F.R. §1.97(c) also enclosed is:

- ☒ Fee under 37 C.F.R. §1.17(p) in the amount of \$180.00; or
- ☐ Statement as specified in 37 C.F.R. §1.97(e):
 - ☐ Each item of information contained in the Information Disclosure Statement cited herein was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
 - ☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, having made a reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing date of the Information Disclosure Statement.

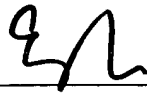
It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: November 5, 2004

Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
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Respectfully submitted,
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(1 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/781,801
Filing Date	February 20, 2004
First Named Inventor	Louis B. Rosenberg
Art Unit	2857
Examiner Name	Hal D. Wachsmen
Attorney Docket Number	IMMR038/06US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,422,941	7/23/2002	Thorner et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
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		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

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¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Sheet **2** of **3****Complete if Known**

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First Named Inventor	Louis B. Rosenberg
Art Unit	2857
Examiner Name	Hal D. Wachsmann
Attorney Docket Number	IMMR038/06US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, <i>Dynamic Systems and Control</i> : Volume 1, ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).

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		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1994
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

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STATEMENT BY APPLICANT**

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Sheet **1** of **4****Complete if Known**

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		5,642,469	06/1997	Hannaford et al.	
		5,629,594	05/1997	Jacobus et al.	
		5,587,937	12/1996	Massie et al.	
		5,461,797	10/1995	Royer et al.	
		5,459,382	10/1995	Jacobus et al.	
		5,396,266	03/1995	Brimhall	
		5,275,565	01/1994	Moncrief	
		5,262,777	11/1993	Low et al.	
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		4,983,786	01/1991	Stevens et al.	
		4,949,119	08/1990	Moncrief et al.	
		4,945,305	07/1990	Blood	
		4,942,545	07/1990	Sapia	
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		4,907,973	03/1990	Hon	
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		4,849,692	07/1989	Blood	
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		4,703,443	10/1987	Moriyasu	
		4,632,341	12/1986	Repperger et al.	
		4,599,070	07/1986	Hladky et al.	
		4,550,617	11/1985	Fraignier et al.	
		4,477,973	10/1984	Davies	
		4,160,508	07/1979	Salisbury, Jr.	
		3,623,064	11/1971	Kagan	

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		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		WIPO	WO9616397		05/1996		
		WIPO	WO9622591		07/1996		
		WIPO	WO9642078		12/1996		

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		Art Unit	2857
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		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	434610		02/1992		
		UK	2254911A		10/1992		

Examiner Signature		Date Considered	
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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		Smith, Geoffrey, "Call It Palpable Progress," Business Week, Oct. 9, 1995, pp. 93, 96.	
		"Proceedings of the IFIP Congress 65," International Federation for Information Processing, Information Processing 1965, vol. 3, New York, May 24-29, 1965, p. 506.	
		Ouh-Young, Ming, "Force Display in Molecular Docking," Chapel Hill 1990, pp. 1-85 (no date with month).	
		Wilker, Steven F. et al., "Development of Tactile Mice for Blind Access to Computers: Importance of Stimulation Locus, Object Size and Vibrotactile Display Resolution," Proceedings of the Human Factors Society 35 th Annual Meeting 1991, pp. 708-712 (no date with month).	
		Krueger, Myron W., "Artificial Reality 1988", pp. 54-75 (no date with month).	
		Iwata, Hiroo, "Pen-based Haptic Virtual Environment," Institute of Engineering Mechanics, University of Tsukuba, Japan, pp. 287-292 (no date).	
		Schmult, Brian et al., "Application Areas for a Force-Feedback Joystick," ASME 1993, DSC-vol. 49, pp. 47-54 (no date with month).	
		Howe, Robert D., "Task Performance with a Dextrous Teleoperated Hand System," Proceedings of SPIE, Nov. 1992, vol. 1833, pp. 1-9.	
		Snow, E. et al., "Compact Force-Reflecting Hand Controller," JPL, Apr. 1991, vol. 15, No. 3, Item No. 153, pp. 1-15a.	
		Kotoku, Tetsuo, "A Predictive Display with Force Feedback and its Application to Remote Manipulation System with Transmission Time Display," IEEE 1992, Jul. 7-10, 1992, pp. 239-246.	
		Tan, Hong Z. et al., "Human Factors for the Design of Force-Reflecting Haptic Interfaces," Tan, Srinivasan, Eberman, & Chang, ASME WAM 1994, pp. 1-11. (No date with month).	
		Colgate J. Edward et al., Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces, Sep. 22, 1993.	
		Iwata, Hiroo et al, Volume Haptization, IEEE 1993, pp. 16-18. (No date with month).	
		Rosenberg, Louis B., "The Use of Virtual Fixtures as Perceptual Overlays to Enhance Operator Performance in Remote Environments," Air Force Material Command, Sep. 1992, pp. 1-42.	
		Burdea, Grigore et al., "A Portable Dextrous Master with Force Feedback," Presence: Teleoperators and Virtual Environments, MIT Press, Jun. 1991.	

Examiner Signature	Date Considered
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Art Unit	2857
Examiner Name	Hal D. Wachsman
Attorney Docket Number	IMMR038/06US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		Rosenberg, Louis B. et al., "Perceptual Decomposition of Virtual Haptic Surfaces," IEEE, Oct. 1993.	
		Rosenberg, Louis B. et al., "Virtual Fixtures as Tools to Enhance Operator Performance in Telepresence Environments," SPIE Telemanipulator Technology, 1993. (No date with month).	
		Burdea, Grigore et al., "Dextrous Telerobotics with Force Feedback-An Overview," Robotica, 1991, vol. 9. (No date with month).	
		Yamakita, M. et al., Tele-Virtual Reality of Dynamic Mechanical Model, IEEE Jul. 7-10, 1992, pp. 1103-1110.	
		Adelstein, Bernard D. et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control Research," 1992, pp. 1-24. (No date with month).	
		Kim, Won S. et al., "Graphics Displays for Operator Aid in Telemanipulation," IEEE 1991, pp. 1059-1067. (No date with month).	
		Kim, Won S. et al., "A Teleoperation Training Simulator with Visual and Kinesthetic Force Virtual Reality", Human Vision, Visual Proceedings, Proc. SPIE 1666, San Jose, CA, Feb. 1992.	
		Minsky, Margaret et al., "Feeling and Seeing: Issues in Force Display," ACM 1990, pp. 235-242. (No date with month).	
		Atkinson, William D. et al., "Computing with Feeling," Comput. & Graphics, vol. 2, No. 2-E, pp. 97-103. (No date).	
		Ouh-young, Ming et al., "Using a Manipulator for Force Display in Molecular Docking," IEEE 1988, pp. 1824-1829.	

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